AMENDMENT(S) TO THE CLAIMS

1. (Currently amended) A method of classifying an image, the method comprising:

    obtaining an image;

    determining one or more classification thresholds;

    determining [[the]] a concentration ratio for the image <u>that indicates a relative level of smoothness of a distribution of a population of elements in the image</u>;

    comparing the concentration ratio to at least one of the one or more classification thresholds; and

    classifying the image based on the comparison of the concentration ratio to at least one of the one or more classification thresholds.

2. (Original) A method as claimed in claim 1 wherein determining the concentration ratio for the image includes determining the luminance components of pixels in the image.

3. (Original) A method as claimed in claim 1 wherein determining the concentration ratio for the image includes determining the grayscale components of the image.

4. (Original) A method as claimed in claim 1 wherein determining the concentration ratio for the image includes generating a histogram for the image.

5. (Original) A method as claimed in claim 1 wherein determining one or more classification thresholds includes a training process.

6. (Previously presented) A method as claimed in claim 5 wherein the training process includes analyzing a set of images having known classifications.

1   7. (Previously presented) A method as claimed in claim 6 wherein analyzing a set of images

2   having known classifications includes determining a concentration ratio for each image in the set

3   of images.

1   8. (Previously presented) A method as claimed in claim 7 wherein determining the concentration

2   ratio for each image in the set of images includes generating a histogram for each image.

1   9. (Previously presented) A method as claimed in claim 5 wherein determining one or more

2   classification thresholds includes determining a threshold for text images and a threshold for

3   photographic images.

1   10. (Previously presented) A method as claimed in claim 5 wherein classifying the image based

2   on the comparison of the concentration ratio to at least one of the one or more classification

3   thresholds is performed according to the following

4   If $(CR < T)$ then image type = text

5   If $(T \leq CR < P)$ then image type = graphic

6   If $(P \leq CR)$ then image type = photographic

7   where CR is a concentration ratio of the image, T is a threshold for text images and P is a

8   threshold for photographic images.

1   11. (Currently amended) ~~A method as claimed in claim 1~~ A method of classifying an image, the

2   method comprising:

3   obtaining an image;

4   determining one or more classification thresholds;

5   determining a concentration ratio for the image;

6   comparing the concentration ratio to at least one of the one or more classification

7 thresholds; and

8   classifying the image based on the comparison of the concentration ratio to at least one of

9 the one or more classification thresholds, wherein determining the concentration ratio for the

10 image includes determining the concentration ratio according to the following

11 $$CR = \left(\sum_L P_L \right)^n \bigg/ \left(\sum_L P_L^n \right)$$

12   where CR is a concentration ratio, n is greater than 1, and P_L is a population at a level L.

1   12. (Previously presented) A method as claimed in claim 11 wherein n is an even integer.

1   13. (Currently amended) An image classifying processor, the processor configured to obtain an

2 image, obtain one or more classification thresholds, determine a concentration ratio for the image

3 that indicates a relative level of smoothness of a distribution of a population of elements in the

4 image, compare the concentration ratio to at least one of the one or more classification thresholds,

5 and classify the image based on the comparison of the concentration ratio to at least one of the

6 one or more classification thresholds.

1   14. (Previously presented) An image classifying processor as claimed in claim 13 wherein the

2 processor is configured to determine the luminance components of pixels in the image.

1   15. (Previously presented) An image classifying processor as claimed in claim 13 wherein the

2 processor is configured to determine the grayscale components of the image.

1   16. (Previously presented) An image classifying processor as claimed in claim 13 wherein the

2 processor is configured to generate a histogram for the image.

1   17. (Previously presented) An image classifying processor as claimed in claim 13 wherein the

2   processor includes a memory and the memory includes a threshold for text images, and a

3   threshold for photographic images.

1   18. (Previously presented) An image classifying processor as claimed in claim 13 wherein the

2   processor is configured to classify the image based on the comparison of the concentration ratio to

3   at least one of the one or more classification thresholds according to the following

4   If (CR < T) then image type = text

5   If (T ≤ CR < P) then image type = graphic

6   If (P ≤ CR) then image type = photographic

7   where CR is a concentration ratio of the image, T is a threshold for text images, and P is a

8   threshold for photographic images.

1   19. (Currently amended) ~~An image classifying processor as claimed in claim 13~~ An image

2   classifying processor, the processor configured to obtain an image, obtain one or more

3   classification thresholds, determine a concentration ratio for the image, compare the concentration

4   ratio to at least one of the one or more classification thresholds, and classify the image based on

5   the comparison of the concentration ratio to at least one of the one or more classification

6   thresholds, wherein the processor is configured to determine the concentration ratio for the image

7   according to the following:

8
$$CR = \left(\sum_L P_L \right)^n \Big/ \left(\sum_L P_L^n \right)$$

9   where CR is a concentration ratio, n is greater than 1, and P_L is a population at a level L.

1   20. (Currently amended) A method of processing an image, the method comprising:

2   capturing an image of an object;

3   classifying the image in a class using a concentration ratio;

4   using the class to modify the operation of an image capturing device; and

5   applying controlled, equalization to an image generated by the image capture device,

6   where the controlled, histogram equalization uses a concentration ratio <u>that indicates a relative</u>

7   <u>level of smoothness of a distribution of a population of elements in the image</u>.

1   21. (Currently amended) An image processing system comprising:

2   an image capture device;

3   an image classifier coupled to the image capture device in a feedback loop; and

4   a controlled, equalization processor coupled to the image capture device, that uses a

5   concentration ratio<u> that indicates a relative level of smoothness of a distribution of a population of</u>

6   <u>elements in the image</u>.

1   22. (Currently amended) An image processing system comprising:

2   an image capture device configured to capture an image; and

3   an image classifier coupled to the image capture device in a feedback loop, the image

4   classifier configured to determine a concentration ratio for the image <u>that indicates a relative level</u>

5   <u>of smoothness of a distribution of a population of elements in the image</u>, compare the

6   concentration ratio to at least one or more classification thresholds, and classify the image based

7   on the comparison of the concentration ratio to at least one of the one or more classification

8   thresholds.

1   23. (Currently amended) A computer-readable medium containing instructions for processing an

2   image by:

3   obtaining an image;

4 determining one or more classification thresholds;

5 determining [[the]] a concentration ratio for the image <u>that indicates a relative level of</u>

6 <u>smoothness of a distribution of a population of elements in the image</u>;

7 comparing the concentration ratio to at least one of the one or more classification

8 thresholds; and

9 classifying the image based on the comparison of the concentration ratio to at least one of

10 the one or more classification thresholds.

1 24. (New) The method as claimed in claim 20, wherein the concentration ratio is determined

2 according to the following:

3
$$CR = \left(\sum_L P_L \right)^n \Big/ \left(\sum_L P_L^n \right)$$

4 where CR is the concentration ratio, n is greater than 1, and P_L is a population at a level L.

1 25. (New) The image processing system as claimed in claim 21, wherein the processor is

2 configured to determine the concentration ratio for the image according to the following:

3
$$CR = \left(\sum_L P_L \right)^n \Big/ \left(\sum_L P_L^n \right)$$

4 where CR is the concentration ratio, n is greater than 1, and P_L is a population at a level L.

1 26. (New) The image processing system as claimed in claim 22, wherein the image classifier is

2 configured to determine the concentration ratio for the image according to the following:

3
$$CR = \left(\sum_L P_L \right)^n \Big/ \left(\sum_L P_L^n \right)$$

4 where CR is the concentration ratio, n is greater than 1, and P_L is a population at a level L.